

REMARKS

A. Introduction

Claims 1, 4-7, and 13-17 were pending and under consideration in the application.

In the Office Action of November 7, 2007, claims 1, 4-7, and 13-17 were rejected as obvious, as explained below.

In response, claims 1, 13, and 14 have been amended. No new matter is presented.

B. Rejection Under 35 U.S.C. § 103(a)

Applicants respectfully request reconsideration of the rejection of claims 1, 4-7, and 13-17 under 35 U.S.C. § 103(a) as being unpatentable over EP 997960 (EP '960) in view of U.S. Patent No. 5,437,945 to Oamaru for at least the following reasons.

Independent claims 1, 13, and 14 presently recite "a charge capacity of the positive electrode is larger than a first charge capacity component of the negative electrode expressed by occluding and releasing light metal." It is important to note the effect of such a configuration. When the secondary battery is charged, lithium ions are released from the positive electrode mixture layer 21b, passed through the electrolytic solution impregnated in the separator 23 and occluded first in the negative electrode material. See Paragraph 0065. When charging is continued, the charging capacity goes beyond the charging capacity of the negative electrode material so that lithium metal precipitates in the negative electrode 22 until the charging is completed. *Id.* Thus, to exceed the charging capacity of the negative electrode and obtain stable precipitation of lithium metal on the surface of the negative electrode, it is necessary to provide a positive electrode with a higher capacity than the negative electrode. If the negative electrode has a higher capacity than the positive electrode, then the precipitation of lithium metal may be avoided.

EP '960 requires a contradictory approach to avoid precipitation of lithium metal and, therefore, teaches away from the present general inventive concept. EP '960 states:

If the nonaqueous electrolyte impregnated in the negative electrode is not distributed

Appl. No. 09/954,806
Amdt. Dated February 7, 2008
Reply to Office Action of November 7, 2007

uniformly in the nonaqueous electrolyte secondary battery, current concentration takes place in the negative electrode so as to cause precipitation of lithium dendrite. To avoid this difficulty, the porosity is set high in the negative electrode so as to improve the permeability of the nonaqueous electrolyte. On the other hand, such a problem does not take place in the positive electrode. In addition, if the porosity of the positive electrode is set at a high level as in the negative electrode, the density of the positive electrode active material layer is lowered, resulting in failure to obtain a high battery capacity. Such being the situation, the porosity of the positive electrode layer is set lower than that of the negative electrode layer.

See EP '960, Paragraph 0182. EP '960 manipulates the negative electrode to prevent the precipitation of lithium dendrite while the present general inventive concept manipulates the negative electrode to provide for the precipitation of lithium dendrite.

Because EP '960 is designed to work in a manner that is completely the opposite of the present general inventive concept, EP '960 teaches away from the present general inventive concept.

A presumption of obviousness may be rebutted based on a claimed invention that falls within a prior art range by showing “[t]hat the prior art taught away from the claimed invention.” *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1322 (Fed. Cir. 2004). See also MPEP § 716.02 (a-g).

Accordingly, for at least the reasons above, Applicant submits that independent claims 1, 13, and 14 are allowable over the references of record, either individually or combined, and withdrawal of these rejections and allowance of these claims are respectfully solicited.

C. Support for Amendment

Support for the amendment of claims 1, 13, and 14 can be found in the specification and drawings, for example, in paragraph 0065. As amended, independent claims 1, 13, and 14 recite features which are not disclosed, taught, or suggested in the prior art of record.

Appl. No. 09/954,806
Amdt. Dated February 7, 2008
Reply to Office Action of November 7, 2007

Accordingly, it is respectfully submitted that independent claims 1, 13, and 14 do not present new matter and are allowable over the prior art of record, and allowance of these claims is earnestly solicited.

D. Conclusion

It is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, there being no other objections or rejections, this application is in condition for allowance, and a notice to this effect is earnestly solicited.

If any further fees are required in connection with the filing of this amendment, please charge the same to our Deposit Account No. 19-3140.

Respectfully submitted,
SONNENSCHEIN NATH & ROSENTHAL LLP

By /Adam C. Rehm/
Adam C. Rehm, Reg. No. 54,797
P.O. Box 061080
Wacker Drive Station, Sears Tower
Chicago, IL 60606-1080
816-460-2542 (telephone)
816-531-7545 (facsimile)
ATTORNEYS FOR APPLICANT